



Public investment management

A public financial management introductory guide

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Abstract

This public financial management introductory guide to public investment management is written specifically for finance or planning ministries in low-income and/or capacity-constrained environments seeking to manage their public investments more efficiently and effectively. Whether or not a country's portfolio of public investments delivers the anticipated economic and social benefits depends crucially on how well it is managed. The paper begins with a definition of public investment management, and proceeds to outline the common features of public investment management systems in low-income countries in order to highlight the gap between how systems are meant to work on paper and how they often work in practise. This is followed by a concrete and pragmatic set of recommendations for how a ministry of finance or planning can improve public investment management in a low-income/low capacity environment. We conclude by providing an annotated bibliography of key literature on this topic to guide further reading.

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Public financial management introductory guide

This ‘Public investment management’ paper forms part of a series of introductory guides on key topics in public financial management (PFM). They are written specifically for capacity-constrained environments and provide an overview and discussion of the main issues related to each key topic, highlighting useful literature. Each introductory guide includes practical suggestions on how capacity-constrained governments can approach reforms, together with brief outlines of other countries’ experiences of PFM reform. They are not intended to be detailed guides to the design and implementation of reforms. They are based on a review of the relevant literature and the practical experience of ODI staff working in these areas.

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1. Overview of public investment management

Recent years have seen a surge of interest in the ways that governments select, implement and manage their public investments and assets. This interest has arisen in response to the following two key trends:

- First, there has been a renewed focus in fiscal policy debates on the role of public capital investment in supporting growth. In the mid-2000s, concerns arose, particularly in Latin American countries, that overly contractionary fiscal policies were stifling growth. This led to debates over how ‘fiscal space’ might be created and used to support growth-promoting capital investment (Rajaram et al., 2014). More recently, historically low interest rates and a stuttering global economy have led the IMF to suggest it is ‘time for an infrastructure push’ (IMF, 2014).
- Second, there is a recognition that past episodes of public investment have resulted in large amounts of money being wasted. As Pritchett (2000) observed, a dollar spent on public investment is not always equivalent to a dollar’s worth of improvement in infrastructure. Problems of inefficient investment have been observed all over the world, but tend to be particularly acute in low-income and low-capacity states. Indeed, it is in the poorest countries where investment needs are greatest that the institutions required to oversee and manage these investments tend to be weakest (IMF, 2015).

A body of literature has emerged on ‘public investment management’ that responds to these concerns and aims to distil international knowledge on what it takes to improve efficiencies in investment spending (Rajaram et al., 2010; Dabla-Norris et al., 2011; Fainboim et al., 2013; Rajaram et al., 2014; IMF, 2015). This literature focuses on the specific institutional capabilities that might be required to deliver efficient investments. Drawing from this literature and the advice of international organisations, a number of countries are putting in place programmes of reform that specifically target improvements in institutions for managing public investment.

This introductory guide looks specifically at the options available to finance and planning ministries in low-income, capacity-constrained countries that are looking to improve the quality and cost-effectiveness of their investment expenditure. Section 2 defines what public investment management is and what makes it distinct from other public spending. Section 3 provides a stylised description of public investment management systems in low-income countries in order to highlight the gap between what is typically considered a well-functioning public investment management system and what actually exists. Section 4 then offers some concrete suggestions for improving public investment management in low-capacity environments. The final section contains an annotated bibliography of key literature on this topic as a guide to further reading. This introductory guide focuses on public investment by central government rather than by local government, although many of the lessons included here are relevant to both.

2. What is public investment management?

2.1 Definitions of public investment

Public investment refers to government spending on economic infrastructure such as airports, roads, railways, water and sewerage systems, public electric and gas utilities, telecommunications and social infrastructure such as schools, hospitals and prisons (IMF, 2015). The term ‘public investment’ is also sometimes used by governments in a wider sense to mean spending on human capital such as education and health spending, or financial investments by government institutions such as sovereign wealth funds. However, the public investment management literature focuses on expenditure related to physical assets. Public investment management relates to the ways that governments manage this investment expenditure, i.e. how they select, construct and maintain their public assets.

This focus on the systems and institutions for managing public investment is relatively new, among both economists and public management specialists working in development. Although development planning and a focus on high rates of public investment dominated thinking in the 1950s and 1960s, as illustrated by the wide use of the Harrod–Domar growth model, it did not address the management aspects of investment. In the 1970s and 1980s, public investment plans (often called Public Investment Programmes, or PIPs) were recommended as a means of linking a portfolio of investment projects with a multi-year development plan (Schiavo-Campo and Tommasi, 1999). The idea behind these planning documents was to create a pipeline of well-prepared projects, appraised using cost–benefit analysis, and made ready for selection in the annual budget process. In practice, however, the results of public investment planning were mixed and the process often led to long ‘wish lists’ dominated by a variety of weak or unsound project proposals.

By the 1980s, development planning was being critiqued as unrealistic and disconnected from fiscal realities. This was particularly the case in the context of ‘dual budgets’, where public investment plans were being used by planning ministries to prepare ‘development’ or ‘capital’ budgets while finance ministries separately prepared ‘recurrent’ budgets. In the wave of public expenditure handbooks released in the late 1990s, references to processes for managing capital expenditures were largely limited to advising governments on how they could integrate the management of capital

and recurrent expenditures – an area that had frequently been identified as a weakness in conventional dual budget systems. These handbooks focused on producing a unified budgetary framework in which a government’s spending decisions would be logically consistent with and mutually supportive of its policy objectives (World Bank, 1998).

2.2 The distinctive challenges of public investment

More recently, there has been an acknowledgement that capital spending is technically ‘different’ from other types of government spending. A number of distinct characteristics of public investment can be identified that merit specific attention (Fainboim et al., 2013), including the following features:

- Spending on public investment projects often involves significant costs and can span several years, making accurate budgeting inherently more challenging.
- It is hard to estimate costs accurately because capital investment is often ‘one off’ and technically complex. This means that projects are often subject to cost overruns that can be a major source of fiscal risks for a government.
- Spending on investment is generally ‘lumpy’, meaning that payments required by government are not always regular and/or predictable.
- There is an imbalance in the timing of costs and benefits because projects usually require significant up-front financing, while the benefits accrue over years and may only be fully realised decades after the asset has been built.
- Spending on investment creates lasting assets that need to be maintained. This means decisions on whether to go ahead with a project today create future financing obligations for operation and maintenance.

Public investment is also subject to political pressures. The large sums involved and the visibility of such investment, and the fact that its benefits are specific to particular locations, mean that politicians and citizens pay close attention to decisions on whether to go ahead

with projects. Efforts to frame the selection of investments solely in economic terms have often tended to overlook the political nature of investment choices.

The nature of capital investment also makes it particularly prone to corruption. The construction of assets usually involves contracting private providers to undertake the work. Such contracts are often high in monetary value and so the potential returns from winning a contract are substantial. There are numerous documented instances of politicians and government officials benefitting from contract awards. For example, according to the World Bank (2011) the roads sector worldwide is plagued by the dangers of widespread fraud, corruption and collusion.

There is also a growing body of empirical evidence showing that public investment is often not managed particularly well. Flyvbjerg et al. (2002), for example, found average cost overruns of 27.6% for a sample of transport projects in developed and developing economies. Flyvbjerg's 2011 study of mega-projects led him to propose an 'iron law of mega projects' that states such projects are '*over budget, over time, over and over again*'. Investment projects are also a common source of waste. Rasul and Rogger (2015) found that 38% of planned Nigerian government projects are never even started, while Williams (2015) found that approximately one-third of municipal infrastructure projects started in Ghana were never completed.

2.3 A 'public investment management' system

The distinctive challenges of managing investments have given rise to a body of literature that seeks to identify whether there are specific institutional arrangements necessary for the efficient management of capital investment.

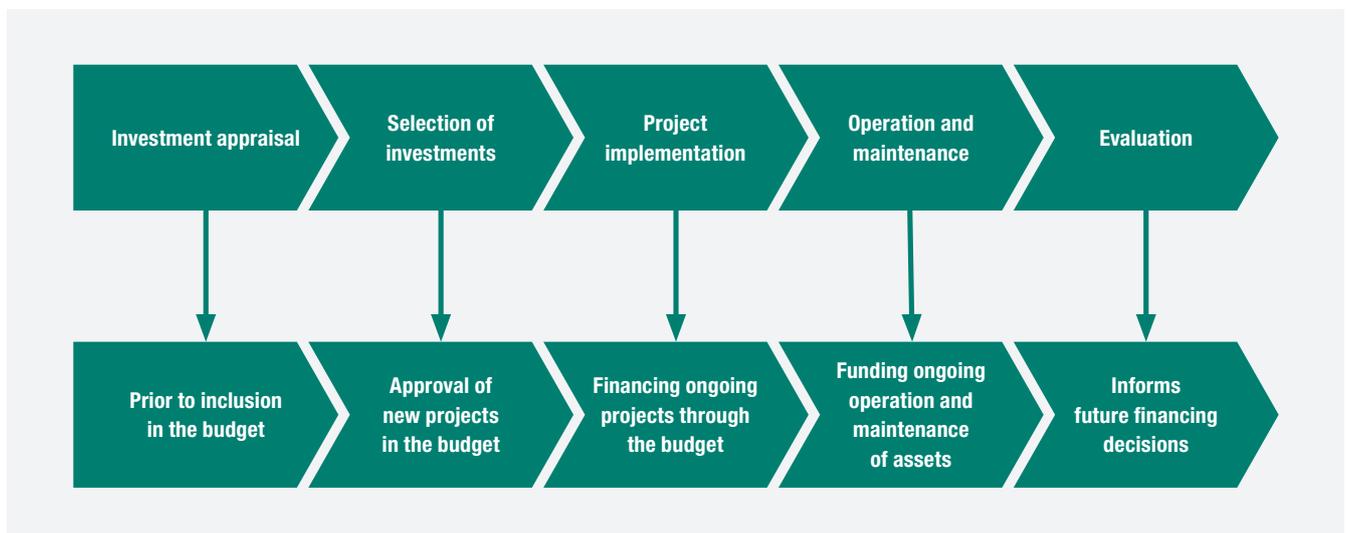
The innovation of this literature has been to recognise that the efficiency of capital spending depends upon decisions taken throughout the life cycle of an asset. In other words, getting good value for money from public investments is not just about having a good system of appraisal or a good budgeting system; it is also about the decisions taken when preparing, selecting and implementing projects, as well as in regards to maintaining and operating the assets once construction has been completed.

From the perspective of a finance ministry, the stages in the life cycle of a public investment can be usefully grouped together into various component processes:

- A set of processes for considering whether investment projects should go ahead or not *before* projects are considered for approval in the budget ('investment appraisal').
- Processes for selecting and approving new projects to receive financing in the budget ('selection of investments').
- Processes for implementing investment projects ('project implementation').
- Processes for maintaining and operating assets once construction has been completed ('operation and maintenance').
- Processes for evaluating projects once they are completed to help inform the improved design and planning of future investments ('evaluation').

In this way, public investment management has come to be thought of as a *system* comprising groups of processes linked around an investment management cycle with links to the annual budget cycle at certain key junctures (Figure 1).

Figure 1: Linking the project cycle and the annual budget cycle



Source: Authors' representation

3. Systems of public investment management in low-income countries

Drawing from key sources in the policy literature, this section sets out what should happen at different stages in the life cycle of an investment asset in order to support efficient public investment spending. In particular, the discussion draws from certain ‘must-have’ institutional features described by Rajaram et al. (2014) that are required to support at least a basic level of functionality at each stage of the investment cycle (while leaving room for future learning and improvement). In practice, these ‘must-have’ features are often absent in low-income countries. A stylised description of what actually happens in many low-income countries is therefore provided. This discussion draws from problems regularly identified in low-capacity environments by diagnostic studies and specific country experiences.

3.1 Investment appraisal

3.1.1 What should happen before a project is considered for approval in the budget?

Efficient investment spending requires that economically and fiscally sensible decisions are able to be made on whether to finance investment projects. In order to support well-informed decisions, investment projects should pass through a series of decision-making processes in order to assess whether a proposed investment is worthwhile. Rajaram et al. (2014) suggest three ‘must-have’ institutional features at the start of the cycle to support sound decision-making: preliminary screening, formal project appraisal and independent review of appraisal.

Preliminary screening

A preliminary screening of projects can be useful for weeding out ‘white elephants’ before they gain planning momentum. Scrutiny should include looking at why the project is needed in terms of the strategic needs it is intended to meet, the logic of the project, alternative approaches, potential demand and a ball-park cost estimate. Preliminary screening can help to ensure that further resources are not allocated to more detailed appraisal if there is no clear strategic need for the project.

The strategic goals for investments should be set out in a policy document, which might take the form of a national or sector plan.

Formal project appraisal

The primary purpose of appraisal is to assess whether a proposed project is worthwhile and represents the best way to carry out such a project. Appraisal in itself is costly and so the resources invested in appraising projects should vary according to the value of the investment being considered. For larger projects the appraisal process might be broken down into two stages: a pre-feasibility study (preliminary appraisal) before a more fully-fledged feasibility study. However, all appraisals should comprise the following elements to support such an assessment:

- *An appraisal of why the project is needed.* This appraisal should consider the strategic justification of the proposed project, i.e. which specific policy objectives the investment is set to fulfil.
- *An economic appraisal of the proposed project’s costs and benefits to society.* This assessment is typically conducted by comparing a proposed project with alternative ways of achieving the same objective, taking account of all the benefits and costs to society as a whole over the life cycle of the investment. For example, the proposed widening of a road to three lanes might be compared against a two-lane option or a business-as-usual scenario (i.e. leaving the road in its present state). The specific techniques employed to undertake economic appraisal can vary. One analytical tool commonly used in such appraisals is cost–benefit analysis (CBA), which involves assigning a monetary value to all the positive (benefits) and negative (costs) effects of the intervention. When benefits cannot be expressed in monetary terms, cost-effectiveness analysis (CEA) may be used as an alternative to CBA. CEA measures a project’s benefits in terms of physical units per \$ spent. A more basic approach to economic appraisal may simply involve a quantitative calculation of costs and a qualitative assessment of potential benefits.

- *An appraisal of how the project will be implemented and its associated risks.* This appraisal should define how a project will be carried out in terms of technical design, management arrangements and approaches to procurement. It should also identify key risks, assess their likelihood and potential impacts and develop plans for their mitigation and/or management.
- *An appraisal of the financial sustainability and fiscal impact of the proposed project.* This appraisal should specify how a project would be financed and the expected monetary cash flows (i.e. expected expenditures and revenues) over the life cycle of the asset.

Independent review of appraisal

Decisions on whether to go ahead with a project should be based upon accurate information about the estimated costs and benefits of that project, including any externalities. In practice, there is a well-documented tendency for ‘optimism bias’ amongst those preparing projects, including donors and ministries, departments and agencies (Flyvbjerg et al., 2002). As a result of this bias, project owners systematically overestimate the benefits and underestimate the costs of a project in their appraisals.

Rajaram et al. (2014) suggest that an independent review of appraisal results could be used as a way to check these tendencies and to restrain political influence over project selection. Such a review could potentially be conducted by an independent government body or by the finance or planning ministry, although achieving *de facto* ‘independence’ of the oversight may be difficult under certain political regimes.

Public–private partnerships

Public projects that are wholly or partly financed through public–private partnership (PPP) arrangements (see Box 1 for further information on PPPs) should also be subject to the same procedures of appraisal to assess whether projects represent a good use of resources (Brumby et al., 2013). Although PPPs sometimes involve a private party providing the up-front financing for an investment, the costs of that investment will ultimately be paid for by the public, either directly by users (through user fees) or indirectly through taxation. From the perspective of resource allocation, the same appraisal methods used for traditionally procured public investment projects should therefore be applied to PPP projects, followed by additional analysis to verify the desirability of a PPP arrangement over traditional procurement.

Box 1: Public–private partnerships

Although there is no standard definition of what constitutes a PPP, such a partnership can be broadly defined as a contractual arrangement that involves the government and a private sector partner working together and sharing risks to deliver policies, services and infrastructure. PPPs have risen in prominence over recent years, being perceived as innovative solutions and a better allocation of inputs than traditional public procurement.

A fairly typical PPP would involve a firm providing up front financing and designing, building, operating and maintaining an asset in exchange for a combination of user fees and/or periodic payments by the government over the life of the contract. However, there are considerable variations between different contract types: a PPP might involve the new construction of a new asset (‘greenfield investment’) or the rehabilitation or private management of an existing asset (‘brownfield investment’). Payments are typically linked to performance, i.e. they are ‘output based’ rather than ‘input based’.

PPPs have been championed as a means of promoting more efficient investment by bringing the discipline of the market to the selection and implementation of projects. They have also been used to attract additional financing for infrastructure investment. When used effectively, PPPs can deliver substantial savings by mobilising private financial resources and know-how. However, such an outcome is by no means guaranteed.

A successful outcome of a PPP is likely to depend on several factors. These include the correct identification of the most efficient bidder, appropriate risk-sharing arrangements, and the nature of the contractual relationship established between the public and private partners.

PPPs also present risks to government budgets by creating large and long-term contingent liabilities, especially when such partnerships are used to circumvent budgetary constraints. These liabilities can affect long-term fiscal and macroeconomic sustainability as well as transfer the financial burden to future generations. Given these potential risks, any government opting to deliver infrastructure services through a PPP should conduct a careful evaluation of its fiscal implications together with a proper assessment of its merits vis-à-vis traditional procurement.

Source: Adapted from PPIAF (2015)

3.1.2 What actually happens in investment appraisal?

Most governments have certain formal guidelines on project appraisal that must be followed in order for a project to be considered for inclusion in the budget. These guidelines may include a requirement for a justification that the project is consistent with the development plan (which may not be difficult given the generality of such plans) and often some kind of economic appraisal. In practice, these procedures are frequently more a matter of form than substance and are not actually followed. This occurs for several reasons. First, the guidelines may be unclear, and even if they are clear, the requirements to follow them may not be enforced. Second, the government may simply lack staff with the requisite skills and/or lack the necessary resources (such as reliable forecasting models or statistical data) to conduct complicated appraisals. They may therefore rely on donors to conduct the appraisal or not conduct it at all.

In addition to these supply-side factors, a lack of demand for high-quality project appraisal can also lead to a weak appraisal system. Lack of domestic political support for appraisal as a basis for project selection is often the most damaging factor in limiting the value of this aspect of investment management. In the 1970s and 1980s, many countries invested in training their staff in CBA; however, lack of continued political support led to these staff moving on to other positions in government and not applying their skills to improve project selection (Rajaram et al., 2014). Political interests may well force certain projects to be adopted regardless of the outcome of formal technical appraisals. There are country examples of projects being appraised *after* they have been approved by the president or cabinet rather than before. Even where systems of appraisal are relatively sophisticated, it is not uncommon for the numbers to be made to ‘add up’ when projects are a high political priority, resulting in overestimated benefits exceeding underestimated costs. This was the case in South Korea prior to the East Asian financial crisis, where appraisal was a stamp of approval rather than a decision-making tool. As a result, only one out of 33 proposed large projects subject to appraisal was rejected between 1994 and 1998 (Han, 2015).

In many of the poorest countries, a large proportion of proposed projects are financed by donors and are not subject to a country-led appraisal process. While donor projects may require some form of formal sign-off by government, it is rare for such projects to be rejected. There is often a perception that donor projects of any type should be welcomed because they represent ‘free’ money for the government. Additionally, donor projects are often coordinated by a dedicated aid-management unit whose primary mandate is often to raise more funds rather than to ensure that money is used effectively. Furthermore, while donor procedures for appraising donor-financed projects are typically much more rigorous than own-country appraisal procedures, donors also suffer from an advocacy bias. This is because such procedures are

designed to make the case for proposed projects to the respective management boards of donor organisations who face different incentives from the recipient government. Quite often the size of a project may be scaled up to achieve aid-targets in donor agencies. As a result, projects may be approved without fully taking account of domestic conditions, capacity constraints, real financial requirements, local impacts and long-term sustainability.

Infrastructure projects are also increasingly being financed outside of the budget through PPPs that are managed separately from traditional government-financed and procured projects. Although the literature notes that PPPs can be beneficial on the grounds of their potential efficiency as a delivery mechanism, in practice PPPs are often entered into as a way of financing projects today without increasing recorded government borrowing. Although public investment in infrastructure assets will always need to be repaid through user fees or taxes, irrespective of the source of financing, having those assets financed by the private sector can be an attractive option for an administration with short-term time horizons. PPPs are sometimes also used to bypass the oversight of finance and planning ministries, with PPP projects being mostly appraised, selected and monitored separately from traditional projects. This has led some governments to proceed with low-quality and costly PPP projects that would otherwise have been excluded from their public investment plans. Two examples of poorly performing PPPs are provided in Box 2.

Box 2: Examples of poor PPP performance

The Fertagus suburban rail passenger service in Portugal

Although the initial contract formally transferred demand risk to the concessionaire, the Portuguese government assumed the debt if traffic remained below the lower traffic-band level for several years. This event materialised and contract renegotiation took place with the government in a relatively weak position.

The Channel Tunnel Rail Link in the UK

In 1996 the UK Department of Transport awarded the contract to London & Continental Railways Limited (LCR). LCR planned to fund the construction of the Link by raising private finance on the back of future revenues from Eurostar UK and direct grants from the government. However, actual demand for the Eurostar train service was significantly below LCR’s forecasts and the company was forced to abandon its original financing plans and instead requested additional grants from the government.

Source: Araújo and Sutherland (2010)

3.2 Selection of new investments in the budget

3.2.1 What should happen when new projects are being selected for approval in the budget?

Once a project has been approved as eligible to receive public money, consideration can then be given as to whether to incorporate the project in the annual budget. The effective implementation of a project requires that funds should be made available to the project on a predictable basis throughout the life cycle of the investment. This means the budget process must ensure that the portfolio of projects being financed is affordable given the availability of resources. *Thus, even after projects have passed through the appraisal process, they may still have to be prioritised, with certain projects not immediately receiving funding.*

In order to make well-informed decisions on whether new projects are affordable, the government needs to have a clear picture of its ongoing commitments. Before considering any new projects, the budget process should ensure that sufficient funds are being made available for the maintenance of existing assets and for ongoing investments, as well as other recurrent expenditure commitments. This is a necessary part of identifying the available resources for allocation to new projects.

Ideally, a technically sound and transparent system should be developed with which to rank all the potential capital projects being considered for funding during the annual budgeting process. Within certain sub-sectors, like roads, it might be possible to rank projects according to benefit–cost ratios; but even here governments may wish to take account of other factors not captured in the economic analysis, such as regional distribution of investment or poverty focus. In such cases it can be useful to apply a multi-criteria scoring system that takes into account a wide range of factors considered important to the government. On the one hand, budgeting should be largely policy-based, with each project ranked in terms of how closely the project's objectives are aligned to national strategic priorities. On the other hand, more practical programming issues should also be considered. Amongst these factors are the readiness to go and the expected timeframes of the project, since projects that produce results more quickly are more likely to be successful given the lower risk of political support deteriorating over time.

Decisions on whether new projects are affordable should factor in both the cost of constructing new assets and the downstream costs of operating and maintaining those assets. In other words, there is a need to balance the capital and recurrent costs in order to produce an end result that will deliver sustainable benefits to the target beneficiaries. This is especially critical for donor-funded projects, which typically create assets while the operation and maintenance costs of those assets are assumed to be borne by the government. This means that government should be able

to deliver the activities and outputs they are responsible for over the entire life cycle of the investment, taking account of the fiscal constraints. For example, where schools are built there should be staff available to teach in them. Similarly, funds should be provided to maintain existing roads before financing the construction of new roads.

3.2.2 What actually happens in the selection of new investments in the budget?

In many low-income countries the financing requirements of projects that have already started greatly exceed the resources available in a given fiscal year. These resource pressures may be further exacerbated by political commitments made to start new projects. The result is that the domestically financed component of the capital budget is often overloaded with a planned programme of work that far exceeds the resources available. Ongoing projects become subject to a repeated process of negotiation each and every year to receive funding in the annual budget. They often need to compete with new projects that have received political backing. Rather than removing projects from the budget, the finance or planning ministry commonly seek to avoid conflict by reducing the funds available to all projects, resulting in there being insufficient funds to meet the contractual commitments or planned programme of work. This can lead to considerable delays and inefficiencies in implementation.

Most low-income countries also face problems of fiscal volatility, either because of commodity price downturns or unpredictable donor funding. Sharp exchange-rate depreciation can also have an impact on the costs of investment projects, which are often denominated in hard currency. In combination these factors frequently lead to public investment becoming the first casualty when deficit controls are put in place. The literature on the political economy of fiscal policy emphasises that pressure groups and vested interests tend to create a bias in favour of recurrent expenditure (Alesina and Perotti, 1994). It is operationally easier to reduce capital expenditure than to reduce current expenditure; the former can be achieved simply by allowing capital assets to depreciate more quickly through reducing maintenance expenditure, or by stopping a few large infrastructure projects (Hemming and Ter-Minassian, 2004). Current expenditure, on the other hand, tends to focus on entitlement-based programmes, public sector employment, wages and pensions, which are politically harder to reduce because they directly impact on citizens.

Donor-financed projects are often only included in budget documents as an afterthought rather than as an integral part of the budget preparation process. Donor-financed projects are typically seen as 'in and out' transactions, i.e. money only goes 'out' when disbursements have come 'in' from donors. In this way, overspending (or indeed underspending) on such projects is not seen as carrying the same fiscal risks as spending on projects financed with domestic revenues (or budget support). This often means that less attention is paid by finance ministries

to the accuracy of annual estimates for donor-financed capital spending and to whether a donor project is really a priority for government.

3.3 Project implementation

3.3.1 What should happen once approved projects are being implemented?

The responsibility for overseeing the implementation of projects usually rests with line ministries. However, centralised agencies can influence the timeliness, efficiency and quality of project delivery in a number of ways:

Procurement. Well-functioning procurement procedures should support the government in obtaining good value for money from contracted projects. There are a number of factors that can affect value for money:

- The level of competition for contracts can affect the quality and costs of goods and services offered.
- The time taken to implement contracts can affect value for money.
- Value for money is also dependent on the specifications for the quality of the work that is to be delivered.

As the nature of goods and services has become more complex, it is increasingly recognised that procurement processes should be linked to earlier stages of project selection, design and budgeting (Rajaram et al., 2014). Building an awareness of earlier project design choices into procurement decisions will improve the effectiveness of key stages of procurement and speed up project implementation overall. Procurement planning initiated in parallel with project design and appraisal may even influence the budget plan estimates of the project cost by identifying a procurement method that provides the best means of achieving the lowest cost for acceptable quality (Rajaram et al., 2014).

Procedures for contract management. Contract management is a critical element in ensuring that the work delivered is consistent with contractual agreements. An important part of procurement therefore involves supervising the contractor's performance. This supervision requires having qualified engineers or auditors to verify the completion and quality of planned phases of construction work and authorising payment tranches as per the contract terms (Rajaram et al., 2014).

Providing funds on a predictable basis. Payments should be made promptly as obligations fall due in order to minimise costs arising from penalties for late payment. This requires that budget appropriations and actual cash releases for a project are sufficient to cover costs over the whole life cycle of the project. In many advanced economies, multi-year commitments are made in the budget once projects are approved so as to ensure that the necessary funds are set aside until the project reaches completion.

Systems for monitoring project implementation. Monitoring project implementation can provide an important check on cost and time overruns, as well as allow for any necessary adjustments during construction. From a financial perspective, systems should allow for the accounting of project costs for the whole duration of the project, rather than tracking financial performance on an annual basis against budget appropriations. In terms of the physical progress of projects, there should be clearly agreed milestones and indicators against which progress can be monitored.

Procedures for project adjustment. Formal processes may also be necessary to reassess the feasibility of a project if estimates of the project's costs and/or benefits have changed significantly during implementation. Alternatively, project sponsors may be asked to recast the project if the expected benefits have changed since the project started, or disbursements even halted. In South Korea, for example, there is a legal requirement that the feasibility of a project be reassessed if an updated forecast of its total cost exceeds initial estimates by more than 20%.

Project management procedures. Project management arrangements play an important role in delivering results because appropriate procedures can reduce risks and control costs. Project management typically involves identifying an accountable project manager working in accordance with approved implementation plans. Project managers should be provided with standardised procedures and guidelines for project adjustments. Government personnel involved in project management (from the central finance ministry or from line ministries) must in turn have the capacity to apply these standards, methods and tools.

3.3.2 What actually happens in project implementation?

Provision of funds to make payment. Due to problems in a country's broader public finance system, such as poor forecasting of revenue or poor control of government expenditure, the payments falling due on capital contracts from month to month frequently far exceed the cash actually available for making payments. Payments are therefore selectively made to certain contractors while other contractors are starved of funds. This can lead to a build-up of arrears on projects and delays in project implementation, and even to projects being abandoned. This problem of 'pending bills' can also cause contractors to factor the costs of payment delays into their bids, further escalating the costs of public investment.

Procurement. Other common problems relate to procurement for investment projects. Low-income countries often have procurement laws in place stipulating that contracts should be awarded on an open and competitive basis. In practice, however, contracts are often awarded to a preferred supplier on a non-competitive basis. A lack of competition in procurement is generally thought to widen the possible scope for awarding contracts based

on favouritism and the potential private benefits that can be gained from a particular contract (Wells, 2013). Even where contracts are awarded on a competitive basis, it is not uncommon for government staff to collude with suppliers to inflate the prices and selectively distribute the benefits. The winning bid for projects is often far lower than the actual costs entailed in delivering projects. There are numerous reasons for this. Some relate to the genuine difficulty in estimating the costs of complex projects (as referred to above). In other cases, contractors may deliberately underestimate costs in order to try and win the bid in the expectation that they can recoup costs at a later date by claiming additional charges or by making compromises in the quality of work delivered (Wells, 2013).

Contract management. The focus in the procurement of goods and services tends to be on the awarding of contracts rather than on managing the performance of the contract to ensure that the conditions of the awarded contract are actually met (Rajaram et al., 2014). In the most extreme circumstances, this can be manifested in contracts being signed and invoices being paid but work never being completed. These shortcomings in monitoring contracts at the project level reflect weaknesses in the overall framework for monitoring and reporting on the government's portfolio of public investment projects.

Project monitoring. Finance or planning ministries often tend to focus on reviewing execution rates of actual spending within the financial year rather than execution rates over the whole life cycle of a project. Strong performance is usually equated with a high annual budget execution rate, with ministries often having an incentive to spend all their funds in a current year – regardless of the effectiveness of their use – for fear of registering an underspend and receiving less funding in the following year. This partly explains the spending surge that some countries experience towards the end of the fiscal year. Where physical monitoring of projects is undertaken, it is often conducted on a rather tenuous basis. The physical progress of projects might be described in terms of guessing a 'percentage completed', for example, without reference to planned milestones or to whether they have been completed on time.

Absorptive capacity. Many projects struggle to absorb the funds that are made available. Briceño-Garmendia et al. (2008) found average budget execution rates of two-thirds for the capital budget in the African countries they surveyed. There are a number of reasons that might explain such limited absorptive capacity:

- Projects are approved in the budget before all the necessary preparatory work is done, including the securing of social and environmental approvals. Lengthy and complex land acquisition approval can also be problematic. In Indonesia, for example, this is the main constraint during the implementation stage of large-scale projects that include a land acquisition component (World Bank, 2012).

- Fragile states commonly have considerable capacity constraints in the local construction sector (Collier, 2009). For example, there may be a very small number of companies with the capability and willingness to deliver major infrastructure projects, thereby limiting the number of projects that can be completed in any one year. Given these constraints, merely channelling extra funds into investment can lead to higher prices rather than to a greater volume of completed projects.
- Weaknesses in the early stages of the project cycle, such as poor design resulting in a need to undertake new feasibility studies, can translate into delays and ultimately to low absorption of funds.
- Poor governance and project management may lead to projects suffering from persistent delays. These may result from delays in the verification of completed milestones, lack of clarity as to who is responsible for instigating and following up specific actions, and/or lack of clarity as to how project payments are to be authorised and signed off.

3.4 Operating and maintaining assets

3.4.1 What should happen to operate and maintain assets once projects are completed?

Finance ministries can support the effective operation and maintenance of assets by ensuring that sufficient resources for this are budgeted for and made available on a predictable basis. Dialogue between finance ministries and spending agencies should focus not only on the creation of new assets, but also on building accountability for the services to be delivered using the new assets. Structures should be in place that allow for the monitoring of existing assets to determine their functionality and rate of depreciation. One way in which this can be done is through asset registers that keep records of existing assets and their current value. Such registers can be updated through periodic surveys of the quality of existing infrastructure assets.

3.4.2 What actually happens in regard to operating and maintaining assets?

In many low-income countries, assets tend to be forgotten about once projects have been completed and as attention shifts to seeking funding for other new projects. This can lead to a lack of budgeted funds to provide for the operation and maintenance of assets created by the public investment. For example, an estimated \$2.4 billion of spending on road rehabilitation (capital expenditure) could have been avoided in sub-Saharan Africa if proper maintenance (recurrent expenditure) had been undertaken (Foster and Briceño-Garmendia, 2010: 10). A dual budgeting system in which capital and recurrent budgeting are conducted separately is often held to blame for underspending on maintenance. However, there is

no reason in principle why an appropriate balance for capital and recurrent spending could not be achieved, where the preparation of the recurrent budget and that of the development budget are well coordinated, not only between core ministries, but within line ministries as well. Overspending on new construction relative to operations and maintenance may reflect the opportunities for politically-beneficial ribbon-cutting (and patronage) that new construction provides compared to the low political impact of maintaining existing assets.

3.5 Investment evaluation

3.5.1 What should happen to evaluate projects after completion?

Evaluating projects after they have been completed can provide an invaluable source of information for the design and implementation of future projects (hence the public investment management *cycle*). Evaluation can also serve as a useful learning tool with which to help improve, over time, the institutional processes through which projects are managed. Building evaluation criteria into project design means that there are clear measures against which the success of a project can be judged. This process might consist of an examination by a responsible agency or line ministry at some point after project completion. Such an examination should assess: (a) whether the project was finished within the original (or amended) budget and time frame (which would comprise the basics of a completion report); (b) whether the outputs were delivered as specified;

and (c) whether the project's intended outcomes were achieved. These evaluations should also identify reasons for any deviation from original benchmarks. An independent audit institution may also undertake a review of certain investment projects.

3.5.2 What actually happens to post-completion project evaluations?

Processes for systematically reviewing the effectiveness of projects once they have been completed are rare in both low-income countries and middle-income countries. Insufficient technical capacity and a general lack of documented project objectives, projected timelines and appraisal analysis make it difficult to assess whether a completed project has achieved its intended objectives and whether the objectives were met on time and at the approved cost.

Furthermore, as in the case of project appraisals, there may simply be a lack of demand for such evaluations from decision-makers who prefer to focus their scarce resources elsewhere in the public investment management cycle. While there may be staff responsible for the monitoring and evaluation of investment projects, the focus of these staff is often exclusively on monitoring the financial progress of a project during its implementation. Where evaluations are carried out they are often conducted solely for donor-financed projects where donor policies oblige such evaluations to be undertaken (as is the case in Viet Nam, for example) (Rajaram et al., 2014). The overriding political priority is often to get the project completed rather than to learn lessons from its delivery.

4. Lessons for low-income countries

This section provides some concrete suggestions for how a ministry of finance or planning can improve public investment management in a low-capacity environment. While these recommendations might not be suitable in all contexts, they are ideas that could usefully be considered at different stages of the investment management cycle.

4.1 Investment appraisal

- Putting in place clear guidelines that project owners must follow in order to have their projects considered for public funding. This could include setting out the different stages of the project preparation process, from identification through to completion, as well as the supporting forms that need to be completed and the deadlines by which information must be submitted. Appraisal processes may also be different for projects of different sizes, with approvals for larger projects needing to undergo more rigorous checks. These thresholds can start high and be lowered as capacities develop. Guidelines can also vary between sectors according to the perceived level of risk.
- Given capacity constraints, it may be more useful to focus attention initially on devising systems to assess which projects should *not* be approved for funding. One way to do this is to impose mandatory preliminary screening of mega-projects (or projects beyond a certain size) in order to weed out ‘white elephants’ early on before they gain planning momentum. In such cases, scrutiny should extend beyond strategic relevance to examine the logic of the project, alternative approaches, potential demand and expected costs. This does not always mean the outright rejection of ‘bad’ projects; rather the procedure is about de-prioritising such projects by moving them down the list of potential projects. This type of de-prioritisation by a finance/planning ministry is often less difficult than rejecting projects, since it is far easier politically to say that a project needs to be adjusted before it can be included in the budget than to reject it outright.
- In order to ensure that projects are not parachuted into the budget without first having been properly prepared and appraised, a strong and rigidly enforced definition of what constitutes an ‘emergency’ project is needed. This is necessary because claiming such ‘emergency’ status is a typical route for projects to bypass appraisal processes.
- Standardised forms should exist for submitting project requests so that these can serve as the basis of a centralised register of projects. The information recorded in this register can then be used as a baseline to review the performance of projects throughout their life cycle, both during the implementation of projects as well as when they are evaluated after completion.
- A checklist for finance ministry desk officers could be useful for ensuring that project owners have submitted all necessary information prior to project approval. Such a checklist may ask for simple confirmation that project owners have included the justification for the project, a detailed breakdown of costs, a preliminary technical design of the project, a procurement plan, and the planned approach to any project-specific challenges (e.g. any necessary permissions for land acquisition). This can help to reduce delays once projects have been approved.
- Building up a centralised store of information on contracts and developing benchmark costs for contracts can help finance and planning ministries to exercise a more effective ‘challenge function’ when vetting estimates of project costs. A basic database that lists all public investment projects and the basic details of the associated contracts can be very useful when it comes to scrutinising the credibility of costs of similar projects.
- Desk officers may not have the necessary skill-set to critically review the analytical content of project appraisals. A standard set of questions could help desk officers review proposals. Bringing in necessary external expertise (for example, academic institutions or donors) may also help to provide a useful extra pair of eyes for appraising project proposals in these circumstances. For the largest projects, consideration could be given to contracting out the process of appraisal. However, contracting out appraisals needs to be done carefully to ensure that the selected contractor has no interest in whether the project proceeds or not and the project sponsor does not control payment of the contractor. Where donors undertake the project appraisal, a ‘twinning’ arrangement between donor and government staff working on the appraisal can allow skills to be acquired by government staff for future application.

4.2 Selection of new investments in the budget

- In order to ensure that projects can receive predictable funding in any given year, a finance ministry needs a clear idea of what the financial commitments actually are for ongoing projects at the start of the annual budget cycle. To help check the accuracy of this information, reports on outstanding commitments could be cross-checked with information on expenditure that has already taken place compared to the original contracts. Ministries should be required to use budgets to finance these commitments in full before new projects are considered.
- New project financing requests at the budget negotiation stage could be linked appropriately to a ministry or department's track record of project completion so that an incentive is created for effective project management and completion. A poor completion record with no clear information about how past challenges in project implementation will be addressed in the next fiscal year could reduce the prospect of new project financing.
- Assessing the past performance of projects can also be a useful guide for developing more accurate spending forecasts for the upcoming financial year. For example, where a ministry is persistently unable to spend the budgets allocated in a given year, estimates of future spending could be revised downwards accordingly.
- Periodic reports could be prepared that compile information on the financial progress of projects as well as updates on how major projects are performing against certain pre-agreed milestones recorded during project appraisal and sometimes listed in the contract. A simple 'red, amber, green' scheme could be used to show whether projects are on or off track in relation to specific areas such as scope, budget, resources, stakeholders, risks and quality. The results can then guide the finance ministry in allocating time for staff to follow up and investigate. Such reports should not be limited to government-financed projects but should also include donor projects, particularly the most significant ones.
- In addition to having a 'senior responsible officer' for each project, having clearly assigned project managers in place for each and every project can be a useful mechanism for building accountability for project performance. Appropriate training in project management is necessary to empower such project managers. In addition, even if project management is contracted out, there remains a need for a designated individual to oversee the project within the sponsoring organisation.
- Finance and/or planning ministries should receive copies of major contracts not only for vetting but also for cross-checking the progress of spending and delivery against original contractual information.

4.3 Project implementation

- Mechanisms can be put in place to protect the agreed total budget for projects once they have been approved. In Thailand, for example, the legislature approves a multi-year appropriation for capital projects that locks in funding throughout a project's life cycle and does not require annual authorisation from Parliament. This may not be possible in all budget systems. Other countries have taken different approaches to ensure that the budgets for multi-year projects are protected. In Timor-Leste, an extra-budgetary fund has been set up for large projects so that they are not subject to annual budgetary negotiations. However, care must be taken when adopting mechanisms such as extra-budgetary funds, since they are often established for dubious political reasons contrary to well-established principles of good governance and sound budgeting (Allen and Radev, 2010).
- Reporting systems should allow for the recording of a project's financial performance not only within the particular budget year but throughout the duration of the project. Such reporting should include capturing the original estimates of a project's total cost, the money spent to date on a project in previous financial years, and the current year's budget and expenditure. Such systems are critical because they estimate the outstanding commitments for ongoing projects, and from this data the finance ministry can identify the fiscal space remaining for new projects.

4.4 Operating and maintaining assets

- To help with rebalancing the split of expenditure between maintenance and new construction, consideration could be given to developing certain cost norms for calculating required maintenance budgets. For example, countries normally have information on the number of kilometres of different types of roads in their territory (rural, paved, unpaved, etc.). This data can then be inputted into existing programmes that aim to provide rough estimates of the cost of maintenance per kilometre for common road types, as is done, for example, through the World Bank's Road Network Evaluation Tools. These estimates can then help in planning the allocation of maintenance resources across the network, though such systems need to be calibrated to local conditions and are only as good as the underlying data. In the road sector, some countries have legislated that revenues from the sale of fuel must be earmarked for spending on road maintenance, as in the case of the Kenyan Road Maintenance Levy Fund for example. These mechanisms are used as a way of protecting the maintenance expenditure needed to get the most out of infrastructure assets.

4.5 Project evaluation

- A first step in improving evaluation could be to compile an annual report on projects that have been completed in the previous financial year. A relatively straightforward comparison could be made between initial project forecasts (in terms of duration and cost) and the actual outturns. More detailed analysis could be undertaken for a small number of large projects in order to assess the quality of delivered work in collaboration with necessary experts (e.g. engineers and surveyors).
- Finance ministries can undertake a study of a sample of projects to review the actual time taken for each stage of the project implementation process as compared to

the plan. This can be a useful tool for identifying major sources of delays and areas in need of reform. A useful example of this type of evaluation is Indonesia's study of constraints to budget execution in the infrastructure sector (World Bank, 2012). In order to formulate policy recommendations, this study first analysed and evaluated each step of the budget execution process, from budget preparation through to the completion of the project. It also included surveys and field visits to gather information from key stakeholders. This kind of data can then feed back into the project design and selection stages so as to improve the governments' ability to select and manage projects in the future.

5. Annotated bibliography of key sources

5.1 Overviews

Rajaram A., Le, T. M., Biletska, N. and Brumby, J. (2010) *A diagnostic framework for assessing public investment management*. World Bank Policy Research Working Paper 5397. Washington, DC: World Bank.

This World Bank diagnostic framework was the first attempt to conceptualise a public investment management system. The framework defines certain ‘must-have’ features that both logic and country experience suggest are essential for achieving efficient public investments. Features 1-4 are concerned with the alignment of capacities and incentives to improve project design and selection, while features 5-8 relate to credible commitments and long-term investment in technical and administrative capacity to improve project implementation. The framework contains many sensible features and offers a helpful and realistic way to systematise key questions to be raised about the effectiveness of a public investment management system in any country. However, the framework on its own offers limited guidance on what might be suitable entry points for reform in low-income countries.

Dabla-Norris, E., Brumby, J., Kyobe, A., Mills, Z. and Papageorgiou, C. (2011) *Investing in public investment: an index of public investment efficiency*. IMF Working Paper WP/11/37. Washington, DC: International Monetary Fund.

Building on the World Bank’s diagnostic framework, this paper introduces a Public Investment Management (PIM) index developed by the IMF in its first attempt to measure the strength of the public investment management process. The index sought to assess the quality and efficiency of the investment process across four consecutive stages: project appraisal, selection, implementation and evaluation. Its main advantage was that it allowed benchmarking of the investment process across 71 developing and emerging countries, providing a dataset that can be used for cross-country analysis. However, while the index was intended to be comprehensive, practicalities associated with data availability constrained the choice of indicators that could be included. The index relied largely on secondary data sources and thus could not evaluate all key institutions specific to public investment, having to depend on proxies for other institutions.

IMF (2015) *Making public investment more efficient*. IMF Policy Paper. Washington, DC: International Monetary Fund.

In this paper the IMF seeks to improve the abovementioned PIM index by developing a new Public Investment Management Assessment (PIMA) tool. Although this new diagnostic tool includes elements similar to the PIM index, it is intended to provide a more comprehensive assessment of the public investment decision-making process by focusing on 15 PIM institutions at three key stages of the investment cycle: (i) planning, (ii) allocation and (iii) implementation. Applied to 25 countries, the paper pinpoints key institutional reform priorities for enhancing public investment management and performance across countries. The indicator framework in the PIMA allows for cross-country comparisons, but often measures institutional forms (e.g. the presence of a medium-term fiscal framework) rather than functions (e.g. whether the framework actually results in prudent fiscal decisions). As with all institutional diagnostic frameworks in the area of PFM (e.g. the Public Expenditure and Financial Accountability (PEFA) assessment), users of this framework should be cautious of directly turning diagnosis (as measured by the indicators) into prescription, and of turning a snapshot of institutional realities into a reform plan.

Fainboim, I., Last, D. and Tandberg, E. (2013) ‘Managing Public Investment’, in M. Cangiano, T. Curristine, and M. Lazare (eds.) *Public financial management and its emerging architecture*. Washington, DC: International Monetary Fund.

This book chapter highlights developments in approaches to public investment management over the past two decades, and in doing so identifies new PFM innovations that have positively influenced the management of public investment. These innovations include medium-term budget frameworks, performance budgeting, longer-term fiscal projections, and accrual accounting. The chapter clearly articulates the theoretical advantages of these PFM tools for public investment management. At the same time, it also explicitly notes the shortcomings of these tools, concluding that they do not address all of the weaknesses of traditional public investment management. The main

shortcoming of this chapter, however, is that real world examples of the tools in operation are mostly drawn from the experiences of developed countries.

Rajaram, A., Le, T. M., Kaiser, K., Kim, J.-H and Frank, J. (eds.) (2014) *The power of public investment management: transforming resources into assets for growth*. Directions in development; public sector governance. Washington, DC: World Bank Group.

This document is the first organised attempt to analyse the difficulties of implementing public investment. This volume is a good basis for consolidating widely dispersed knowledge about public investment management. It consists of seven chapters: building a system for public investment management; a unified framework for public investment management; country experiences of public investment management; approaches to better project appraisal; public investment management under uncertainty; procurement and public investment management; and public investment management for public–private partnerships. This is the most comprehensive assessment of the realities of public investment management to date.

5.2 Investment appraisal

Flanagan, J. (n.d.) *Better business cases: international guide to developing the project business case*. London: TSO.

This guidance developed by the Welsh Government is linked to improving project appraisal using the UK's 'five case' methodology. It sets out in accessible language some of the conceptual underpinnings of appraisal that are relevant across different country contexts.

Jenkins, G., Kuo, C-Y, and Harberger, A. (2011) *Cost-benefit analysis for investment decisions*. Development Discussion Paper 2011-1. The John-Deutsch Institute, Queen's University, Kingston, Canada.

This is a comprehensive study of cost–benefit analysis and is generally deemed to be a key reference document for experts in this field. The analysis, however, is quite technical and is likely to be overly complex for the requirements of an appraisal system in low-capability states.

HM Treasury United Kingdom (2003) *The Green Book. Appraisal and evaluation in central government*. London: The Treasury Office.

The Green Book published by HM Treasury provides guidance for public sector bodies on how to appraise proposals before committing funds to a policy, programme or project. It describes how the economic, financial, social and environmental assessments of a policy, programme or project should be combined. Again, the language used is relatively easy to understand and elements of the analysis could be drawn from and applied in low-income contexts.

National Treasury of South Africa (2016) *Capital planning guidelines*. National Treasury, South Africa.

This offers an example of a guidance document that is provided to spending ministries in South Africa on how infrastructure programmes and project proposals should be planned, appraised and evaluated before significant funds are committed (in its 2017 Medium Term Expenditure Framework).

5.3 Budgeting

Schiavo-Campo, S. and Tommasi, D. (1999) 'The programming of public investment and the management of external assistance', in S. Schiavo-Campo and D. Tommasi (eds.) *Managing government expenditures*. Manila: Asian Development Bank.

Although public investment plans have fallen out of favour in the public finance field, this chapter offers useful practical tips for thinking about how to programme public investments in the budget. It also tackles issues of how to budget for investments when much of the investment budget is financed by overseas aid.

Premchand, A. (2007) 'Capital budgets: theory and practice', in A. Shah (ed.) *Budgeting and budgetary institutions*. Washington, DC: World Bank.

This book chapter is primarily a theoretical piece reviewing and debating the merits of treating capital items separately in the budget. It gives limited guidance to practitioners seeking practical advice on how to operationalise a capital budgeting system.

5.4 Procurement

Malta, V., Joao, N., Schapper, P., Calvo-Gonzales, O. and Berroa, D. (2011) 'Old rules, new realities: are existing public procurement systems addressing current and future needs?' Public Sector Study 66427. Washington, DC: World Bank.

This document provides a useful summary of the key evolving debates in efforts to support improved public procurement. It outlines the rationale for procurement to focus more on accountability for results and less on compliance with fixed rules.

Asian Development Bank (2002) 'The governance brief: understanding public procurement'. Manila: ADB.

This four-page primer on public procurement is a useful introduction for readers who are unfamiliar with basic public procurement concepts. It describes some of the current trends and challenges in public procurement, how procurement works and whether to use procurement to promote other commercial and social policies. It also argues in favour of using procurement agents in low-capacity environments and discusses the importance of national standards.

5.5 Contract management

National Audit Office / Office of Government Commerce, UK (2008). *Good practice contract management framework*. London: National Audit Office.

This guidance note provides a useful conceptual framework for thinking through the components of

effective contract management. It is aimed at a UK audience, but potentially offers a useful structure for thinking about contract management issues across different country contexts.

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Public investment management (PIM) is a crucial component of infrastructure investment and economic development. Improvements to PIM are expected to...Â How can Public Expenditure and Financial Accountability (PEFA) be us...ed to shape policy development in public financial management? Can it shape policy areas such as anticorruption, revenue mobilization, political economy analysis, and fragile states? READ MORE and share your thoughts: <https://openknowledge.worldbank.org/â€¦/3â€¦> â€¢ Strengthening public investment management (PIM) can reduce the efficiency gap by up to two-thirds, making public investment more predictable, credible, and productive. The resulting higher public investment efficiency would also increase significantly (in some cases double) the impact of that investment on economic output. â€¢ The new The IMF's new Public Investment Management Assessment (PIMA) framework helps countries evaluate the strength of their PIM practices. The PIMA evaluates 15 institutions that shape decision-making at the three key stages of the public investment cycle: Planning sustainable investment across the public sector; Allocating investment to the right sectors and projects. Implementing projects on time and on budget. Publication Date: 10.05.2018.